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Title **Development of Code for Beam Steering in Phased Array Antennas**

Author/s **B A M Tayaru, Hema Singh, R M Jha**

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Abstract

In this report, the pattern synthesis of phased array antenna having different amplitude distributions is studied. Using the theory of phased array available in open literature, computer codes are developed in order to obtain the patterns for linear and planar arrays. The distributions considered are uniform, cosine, cosine-squared, Taylor, and Dolph-Chebyshev's. The computed results are validated with those available in public domain. The patterns obtained using different illumination are compared and discussed. Effects of various parameters such as number of elements, sidelobe level, spacing between elements, and the transition index on the shape of the pattern are analyzed. Furthermore, code is modified to analyze the effect of steering of the beam by the variation of the progressive phase shift in between the elements. The change in the shape of the pattern due to steering effect is discussed.